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ABSTRACT

The digest focuses on the nature of dyslexia and its characteristics. An initial section notes the variations in definitions as a function of the discipline. Diagnosis of dyslexia is said to isolate the specific difficulties associated with the problem and to suggest appropriate educational intervention. Typical characteristics of dyslexia are noted, including a family history of reading problems, predominant occurrence in males, an average or above average IQ and possibly a proficiency in math, lack of enjoyment of reading as a leisure activity, problems of letter and word reversal, and difficulty transferring information from what is heard to what is seen and vice versa. The contribution of three major factors to dyslexia is addressed: ocular problems, language problems, and visuo-spatial-motor problems. A list of references and resources concludes the digest. (CL)

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WHAT IS DYSLEXIA?

Dyslexia is a term that has been loosely applied to reading disabilities. Specific definitions of dyslexia vary with disciplines. Those in medicine define dyslexia as a condition resulting from neurological, maturational, and genetic causes, while those in psychology relate dyslexia on the basis of the specific reading problems evidenced and give no reference to causation. All disciplines would probably agree that dyslexia is evidenced by persons of otherwise normal intellectual capacity who have not learned to read despite exposure to adequate instruction.

How is Dyslexia Diagnosed?

The diagnosis of dyslexia usually begins with an awareness by parents or teachers that a problem in reading exists. A physician is often the first diagnostician to explore the nature of the difficulty. The medical practitioner should investigate the cause of the reading problem by conducting a complete physical examination and obtaining a comprehensive health history. If indicated, the child should be referred for a neurological examination. If dyslexia is suspected, the physician should refer the child for further evaluation and treatment by a specialist in psychoeducational diagnosis.

The major purpose of the diagnostic process is to isolate the specific difficulties associated with dyslexia and to suggest appropriate educational intervention. Usually the diagnostician will employ a battery of assessment instruments that explore the relationship of specific reading problems to the intellectual, achievement, perceptual, motoric, linguistic, and adaptive capabilities of the individual. Based on the results, an intervention plan can be implemented by a special educator or remedial reading teacher trained in specialized reading techniques. No one remedial reading method works for all reading disabled students. Therefore it is important that the teacher have mastery of many different techniques.

What Are Some of the Characteristics of Dyslexia?

An individual is identified as dyslexic when a significant discrepancy exists between intellectual ability and reading performance without an apparent physical, emotional, or cultural cause. Common findings in the history include, but are not limited to: (1) family history of reading problems; (2) a predominant occurrence in males (males to females 8:1); (3) an average or above average IQ and, not uncommonly, a proficiency in math; (4) no enjoyment of reading as a leisure activity; (5) problems of letter and word reversal; (6) devel-

opmental history of problems in coordination and left/right dominance; (7) poor visual memory for language symbols; (8) auditory language difficulties in word finding, fluency, meaning, or sequence; (9) difficulty transferring information from what is heard to what is seen and vice versa.

Specific reading problems associated with dyslexia include difficulty in pronouncing new words, difficulty distinguishing similarities and differences in words (no for on), and difficulty discriminating differences in letter sound (pin, pen). Other problems may include reversal of words and letters, disorganization of word order, poor reading comprehension, and difficulty applying what has been read to social or learning situations.

What Factors Contribute to Dyslexia?

Ocular Problems. Several reliable studies (Helveston, 1969; Blika, 1982; Keys, 1982; Hiatt, 1984) have found that dyslexic individuals have no greater incidence of eye problems than do individuals with normal reading ability. Such parameters as visual acuity, stereo acuity, ocular alignment and motility, fusion status (break point amplitude), and refractive error have not been shown to be significantly different in poor versus normal readers. Individuals with reading problems should, however, have a careful eye examination as part of an overall medical examination. There is no scientific evidence that visual training (including eye muscle exercises, ocular tracking or pursuit exercises, or glasses with bifocals or prisms) leads to significant improvement in the performance of a dyslexic individual.

Language Problems. According to Mattis (1978), the primary contributing factor to dyslexia is an auditory language deficit. Approximately 86% of the individuals identified as dyslexic evidence an auditory language disorder that prevents the individual from linking the spoken form of a word with its written equivalent. In light of this, any individual with reading problems should have a careful evaluation of his or her language capabilities and where indicated, appropriate speech and language intervention should be provided.

Visuo-Spatial-Motor Problems. In contrast to language problems, visuo-spatial-motor factors of dyslexia appear less frequently (Robinson & Schwartz, 1973). Approximately 5% of the individuals identified as dyslexic have a visuo-spatial-motor problem that interferes with sequential organization, scanning, and the perception of temporal and spatial cues. Although visuo-spatial-motor confusion is common in

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young children who are just learning to read, these problems do not tend to account for severe and persistent reading difficulties unless the child has missed so much basic reading instruction that he cannot get caught up. Assessment of visual, spatial, and motor capacities should be included in the diagnosis of any coordination or orientation disorder, however, there is no scientific evidence that interventions such as neurological and sensory organizational training, laterality training, dominance training, balance beam, or reflex inhibition will significantly accelerate reading performance.

Other Factors. The importance of general intelligence in learning to read has been examined and shown to be a critical factor in both reading and language abilities. Investigations of the role of dominance in handedness, eyedness, and mixed laterality have produced no consistent conclusions. Studies investigating low birth weight, EEG abnormalities, temperamental attributes, attention deficit disorders, birth order, food additives, and chemical allergies have yielded mixed results. What is clear is that a wide range of factors can be associated with reading difficulties but that these factors work differently in different children. There is no simple formula for diagnosing and treating a dyslexic child. Each one requires his or her own individual program.

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RESOURCES

Available from The Council for Exceptional Children, 1920 Association Drive, Reston VA 22091 (703-620-3660).

Reflections on Growing Up Disabled, edited by Reginald L. Jones. Contains an extensive chapter written by a learning disabled woman. Provides insight into the mixed-up world of the nonreader. No. 258, 1983, 112pp. ISBN 0-86586-134-X. CEC/ERIC, \$7.50.

Educating the Other Half: Implications of Left-Right Brain Research, by Rorald L. Rubenzer. Includes research on left/right brain functioning and learning disabilities. No. 264, 1982, 44pp. CEC/ERIC, \$4.00.

Learning Disabled Adolescents: Programs, Curriculums, Teaching Methods. A computer search reprint containing 100 abstracts. No. 507, updated twice a year \$10.00.

Learning Disabled Elementary School Students: Programs, Curriculum Guides, Teaching Methods. A computer search reprint containing 100 abstracts. No. 525, updated twice a year \$10.00.

OTHER RESOURCES

Benton, A. L., & Pearl, D. (1978). *Dyslexia*. Oxford University Press, 200 Madison Ave., New York, NY.

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